Ample evidence documents the benefits of regular physical activity in substantially reducing the risk of coronary heart disease, diabetes, high blood pressure, stroke, several types of cancer, depression, and early death. Physical activity also helps to control weight, improve cardio-respiratory and muscular fitness, prevent falls, improve cognitive function among older adults, lower the risk of hip fracture, increase bone density, and improve sleep quality.¹ In addition, a strong positive relationship has been found between physical fitness and academic achievement in children and adolescents.²

Profile of Adults, Youth and Children
This module offers a statistical profile of the physical activity of adults, youth and children in California, the largest and most demographically diverse state in the nation.

Adults – in U.S. and California
The 2008 Physical Activity Guidelines for Americans, published by the U.S. Department of Health and Human Services, established the first comprehensive, evidence-based federal guidelines for physical activity for those age 6 and older (see Appendix A). These new criteria recommend that adults (18+) get 150 minutes per week of moderate exercise, or 75 minutes per week of vigorous exercise, or a combination of both performed in episodes of at least 10 minutes, preferably spread throughout the week.

According to the national Behavioral Risk Factor Surveillance System (BRFSS), 66.7% of Californians ages 18 and older met these guidelines in 2007, compared to 64.5% of adults nationally.³ However, California's Survey Research Group (SRG) conducts a more precise analysis of the BRFSS data by weighting analyses to 2000 census figures for the state. By using California-specific demographics, SRG's research, called the California Behavioral Risk Factor Surveillance System (CBRFSS), also provides more precise estimates for race and ethnicity, gender, income and age.⁴
California Data
The percent of adults ages 18 and over meeting the recommended federal guidelines for physical activity increased from 63.6% in 2001 to 67.9% in 2009. In addition:

- **Race/ethnicity.** In 2009, 71.5% of whites met federal guidelines for physical activity, followed by African Americans (70.0%), Latinos (64.2%), and Asians/Other (60.0%) (see Table 1). While all race/ethnicity groups showed improvement in the recommended level of physical activity between 2001 and 2009, Hispanics/Latinos had the greatest percent increase (15.5%), followed by African Americans (10.8%).

<table>
<thead>
<tr>
<th>Table 1. Percent of Adults Ages 18+ Meeting Recommended Federal Guidelines for Physical Activity, (^a) by Race/Ethnicity, (^b) California, 2001 and 2009</th>
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<tr>
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<tr>
<td>2001</td>
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<tr>
<td>2009</td>
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</tbody>
</table>

\(^a\) For adults 18 and over, the federal guidelines recommend 150 minutes of moderate activity, or 75 minutes of vigorous activity, or a combination of both moderate and vigorous activity per week.

\(^b\) The differences in physical activity by race/ethnicity are statistically significant for 2001 \(p < 0.0001\) and for 2009 \(p < 0.0001\). Statistical significance for the changes from 2001 to 2009 is not available.


- **Gender.** More men (71.0%) than women (64.8%) met federal guidelines for recommended physical activity.

- **Age.** Physical activity was more prevalent among younger groups, and steadily decreased with age. In 2009, 78.9% of 18-24 year olds met federal guidelines, followed by 69.6% of 25-34 year olds, 67.5% of those ages 35-44, 66.6% of 45-54 year olds, 64.1% of those ages 55 to 64, and 59.3% of those 65 and older.

- **Income.** Californians with the highest incomes (over $75,000) reported the highest percentage of recommended physical activity (77.0%), while Californians who made less than $15,000 per year reported the lowest percentage of recommended physical activity (58.5%) (see Table 2).

<table>
<thead>
<tr>
<th>Table 2. Percent of Adults Ages 18+ Meeting Recommended Federal Guidelines for Physical Activity, (^b) by Income, (^a) California, 2001 and 2009</th>
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<td>2001</td>
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<td>2009</td>
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</tbody>
</table>

\(^a\) For adults 18 and over, the federal guidelines recommend 150 minutes of moderate activity, or 75 minutes of vigorous activity, or a combination of both moderate and vigorous activity per week.

\(^b\) The differences in physical activity by income are statistically significant for 2001 \(p < 0.0001\) and for 2009 \(p < 0.0001\). Statistical significance for the changes from 2001 to 2009 is not available.

California Youth (12-17)

The 2008 Physical Activity Guidelines for Americans recommend one hour (60 minutes) or more of physical activity every day for children and youth ages 6-17 (see Appendix A).

The 2008 California Teen Eating, Exercise and Nutrition Survey (CalTEENS) conducted among California adolescents ages 12-17 found improvement in the amount of physical activity reported by youth since 2000. In 2008, on the previous day:

- **Physical Activity.** 50.0% of youth reported getting the recommended daily minimum one hour of physical activity, compared to 40.0% in 2000, a percent increase of 25.0%.

- **Amount of Physical Activity.** In 2008, youth reported an average of 69 minutes of moderate or vigorous physical activities, such as basketball, dancing, soccer, or brisk walking. (These data cannot be compared to previous surveys due to a change in methodology in 2006.)

- **Gender Differences.** In 2008, 54.9% of boys reported one hour or more of physical activity on the previous day, a 9.8% increase from 50.0% in 2000. Girls showed the highest gain, with 45.1% reporting one hour or more of physical activity in 2008, a 55.5% increase from 29.0% in 2000.

- **Racial/Ethnic Differences.** In 2008, 54.3% of white youth reported participating in one hour or more of physical activity on the previous day, followed by Latinos (50.7%), African Americans (45.4%), and Asian/Other youth (39.6%). Improvement was seen in all groups, with the greatest percent increase for Latinos (49.1%), followed by a rise of 37.6% for African Americans, 20.0% for Asian/Other, and 13.1% for white youth (see Table 3).

| Table 3. Percent 12-17 Year Olds Reporting One Hour or More of Physical Activity on the Previous Day, by Race/Ethnicity, California, 2000, 2008 |
|-----------------|-----|-------|-----|-------|
|                 | 2000 |       | 2008 |       |
| White           | 48.0 | 54.3  | 45.4 | 39.6  |
| Latino          | 34.0 | 30.7  | 33.0 | 33.0  |
| African American| 33.0 | 33.0  | 33.0 | 33.0  |
| Asian/Other     | 33.0 | 33.0  | 33.0 | 33.0  |

In 2008, youth reported the main reasons that kept them from getting more physical activity were:8

- No time (28.2%),
- Too busy (9.5%),
- Already get enough (9%),
- Laziness (8.8%),
- Too tired (7.4%),
- Rather do something else (5.1%), and
- Other (32.2%).

The CalTEENS survey also indicates that the time youth spend behind screens (television, gaming and computers) limits time available to be physically active.

- According to CalTEENS, on a given day in 2008, youth ages 12-17 spent an average of 101 minutes watching TV or using the computer for fun, compared to 134 minutes in 2000, a 24.6% decrease. Youth also reported spending an average of 47 minutes doing homework on the computer, compared to 26 minutes in 2000, representing an 80.7% increase.9

- The 2008 CalTEENS survey also found that 52.0% of California youth reported having a television in their bedroom – an 8.8% decrease from 57% in 2002 (the first year this question was asked), ranging from 72.9% of African American youth, 68% of Latino, 37.3% of white youth, and 35.2% of Asian youth.10

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**Acronyms, Surveys & Methodologies**

The statistical profiles in *Understanding Nutrition: A Primer on Programs and Policies in California* compile data from numerous surveys.

**BRFSS:** The Behavioral Risk Factor Surveillance System compiles national data from a system of state-administered, random-digit-dial phone interviews. The survey began in the late 1980’s and uses standardized questions with individuals 18 and older.

**CBRFSS:** The California Behavioral Risk Factor Surveillance System analyzes BRFSS data and weights it to California Department of Finance demographic data to more accurately represent California’s diverse population.

**CDPS:** The California Dietary Practices Survey, which began in 1989, is administered in odd-numbered years using a computer-assisted, random-digit-dial process to provide a representative sample of the adult 18+ population that have land-line telephones. Interviews are conducted in English and Spanish. Latino, African American, and low-income adults are oversampled to allow trend analysis among populations that are typically underrepresented.

**CHIS:** The California Health Interview Survey is a random-digit-dial telephone survey conducted every two years since 2001 that interviews 50,000 children, teenagers, and adults throughout the state on a wide range of health topics. It provides a detailed picture of the health and health care needs of California’s large and diverse population. Many analyses are available at the county level.

**CalTEENS:** The California Teen Eating, Exercise and Nutrition Survey, operated since 1998, is a biennial telephone survey of partially random, digit-dialed and partially list-assisted 12-17 year olds in California, and the sample is weighted to the most recent state Department of Finance data.

**CalCHEEPS:** The biennial California Children’s Healthy Eating and Exercise Practices Survey has used a demographically balanced market-research panel of households with 9-11 year olds since 1999. It includes a self-administered, parent-assisted mail survey and a follow-up telephone interview with a subset of the mail survey respondents.

**mPINC:** Maternity Practices in Infant Nutrition and Care is a national survey of maternity care practices and policies conducted by the Centers for Disease Control and Prevention that, beginning in 2007, has been conducted every 2 years. The survey is mailed to all facilities with registered maternity beds in the United States and Territories.

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8 “Other” includes “don’t like it,” “don’t look good while doing it,” “don’t have a safe place,” “not important,” “don’t have right equipment,” “physically unable,” “afraid of getting hurt,” “weather too hot,” and “no current sports program” (none of which exceed 3%).

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Children (9-11)
According to the *California Children’s Healthy Eating and Exercise Practices Survey* (CalCHEEPS) administered in 2009, 48.2% of children ages 9-11 had one hour or more of moderate and vigorous physical activity on a typical weekday, compared to 50.0% in 2001.

In 2009:

- 54.5% of boys met the federal guideline, as did 42.1% of girls.
- 55.9% of white children, 47.9% of African American, 47.2% of Latino, and 31.3% of Asian children met the one-hour guideline for daily exercise.
- Children from low-income families that participated in school breakfast (37.2%) and school lunch (42.8%) programs were less likely to get one hour or more of moderate/vigorous daily physical activity than children who did not participate in the breakfast (51.1%) or lunch (57.3%) programs.

The 2009 CalCHEEPS survey also found that, on a typical day, children ages 9-11 reported an average of 81 minutes watching TV or playing video or computer games for fun. This was a 9% increase from the 74 minutes reported in 2001.

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**Barriers to Physical Activity**
A number of environmental factors result in low levels of physical activity:

- *Traffic.* Pedestrians and bicyclists using traditionally designed streets face traffic congestion, unsafe intersections, and pollution, conditions which tend to be exacerbated in low-income communities.\(^a\)
- *Suburban sprawl.* Suburban land use patterns that were planned for automobile use, typically lack adequate sidewalks and bike paths.\(^b\)
- *Safety.* Violence and the fear of violence and crime limit time outdoors in some urban communities.\(^c\)


Student Physical Fitness
Physical inactivity translates to lack of physical fitness. The California Department of Education is required by state law to annually test the level of physical fitness of 5th, 7th, and 9th graders, and all public school students in these grades are required to take the Physical Fitness Test (PFT) whether or not they are enrolled in a physical education class. The PFT is composed of six fitness areas, including aerobic capacity, abdominal strength and endurance, upper body strength and endurance, body composition, trunk extensor strength and flexibility, and flexibility.

Of the more than 1.3 million California students tested during the 2009-2010 school year, only 29.0% of students in the 5th grade, 35.0% in the 7th grade, and not quite 39% in the 9th grade met minimal fitness standards. With the exception of Grade 5 between 2009 and 2010, these results show slow but steady improvement since 2006 for children at each grade level and – possibly – for students as they progress through the grades (Table 4).

Girls were more physically fit than boys in the 5th and 7th grades, but not in the 9th grade. Of the students who met minimal fitness standards, percentages were higher for Asian, white, and Filipino students than for other groups. For all racial/ethnic groups, physical fitness was higher for 9th graders than for 5th or 7th graders (see Table 5).

| Table 4: Percentage of 5th, 7th and 9th Grade Students Meeting Minimal Fitness Standards, 2006-2010, California |
|---|---|---|---|---|---|---|---|
| Grade | 2006 | 2007 | 2008 | 2009 | 2010 | 4 Year Change (2006 to 2010) | 1 Year Change (2009 to 2010) |
| Grade 5 | 25.6 | 27.1 | 28.5 | 29.2 | 29.0 | 3.4 | -0.2 |
| Grade 7 | 29.6 | 30.9 | 32.9 | 34.2 | 35.0 | 5.4 | 0.8 |
| Grade 9 | 27.4 | 30.1 | 35.6 | 37.9 | 38.7 | 11.3 | 0.8 |


| Table 5. Percent of Students by Gender and Race/Ethnicity Meeting Minimal Physical Fitness Standards, 5th, 7th and 9th Grades, 2009-2010, California |
|---|---|---|---|
| | 5th grade | 7th grade | 9th grade |
| Male | 25.9 | 32.1 | 39.7 |
| Female | 32.2 | 37.9 | 37.4 |
| Asian | 37.0 | 47.0 | 52.7 |
| White | 38.5 | 43.4 | 47.2 |
| Filipino | 32.1 | 41.9 | 47.2 |
| Pacific Islander | 27.8 | 29.0 | 31.7 |
| African American | 26.0 | 30.1 | 31.8 |
| American Indian | 25.2 | 27.2 | 34.1 |
| Latino | 22.6 | 28.6 | 31.9 |

Participation in Physical Education

Physical education (PE) classes in school are one way for children and youth to become more physically fit.

Children (9-11)
In 2009, for elementary school children, 9-11 years old in California:

- 18.4% reported taking PE or gym classes less than one day per week at school.
- The average number of PE classes that children reported taking per week was 2.1, with a length of 36.2 minutes per class.

Youth (12-17)
In both 2000 and 2008, reported participation in PE classes for California students ages 12-17 decreased as the age of students increased. While PE participation among 12-15 year olds was relatively high, 16-17 year olds reported a considerable decrease in their participation from 2000 to 2008, especially girls.

Between 2000 and 2008, participation in PE held steady for boys and girls, ages 12-15, while participation by older teens declined. Participation by older girls dropped 28.3%, while older boys’ dropped by 16.4% (see Table 6).

<table>
<thead>
<tr>
<th>Ages</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-13</td>
<td>93</td>
<td>95</td>
</tr>
<tr>
<td>14-15</td>
<td>83</td>
<td>84</td>
</tr>
<tr>
<td>16-17</td>
<td>55</td>
<td>46</td>
</tr>
</tbody>
</table>

A number of factors affect PE participation:

- Over half of California elementary school districts do not provide the required number of minutes for PE,14 and 15% of teens reported that their school either does not require or offer PE classes.15

- Shrinking school budgets continue to erode PE staffing, resources and programs.16, 17

- PE classes are overcrowded,18 which typically translates to classes that provide less moderate-to-vigorous physical activity.19

- The quality of PE is uneven across schools and school districts, particularly at the elementary level and in low-income communities.20

- PE is not valued as an academic priority.21

### Physical Education Requirements for Public Schools in California

The California Education Code requires school districts to offer physical education classes and specifies the minimum number of minutes of physical education that must be provided to students.

**Elementary Grades 1–6**  
Minimum of 200 minutes each 10 days

**Elementary School Districts Grades 1–8**  
Minimum of 200 minutes each 10 days

**Secondary Grades 7–12**  
Minimum of 400 minutes each 10 days

The intent of the Education Code is to have daily physical education available in all grade levels. However, since 1978 students may be exempted from physical education for any two years during grades 10 through 12 (Education Code Section 51241). Also, under certain circumstances, the California State Board of Education will partially waive some requirements for middle and secondary schools.

**APPENDIX A: Guidelines for Physical Activity – Federal & NASPE**

**Federal Guidelines for Ages 6 and Over**
The *2008 Physical Activity Guidelines for Americans*, issued by the U.S. Department of Health and Human Services, provide science-based guidance for those ages 6 and older to improve their health through appropriate physical activity.⁵

These are the first national guidelines ever issued by the federal government for physical activity and constitute the foundation for 10-year, science-based objectives outlined in *Healthy People 2020*.

**Children and Adolescents (ages 6-17)**
- One hour (60 minutes) or more of physical activity every day.
- Most of the one hour or more a day should be either moderate or vigorous intensity aerobic physical activity.
- Vigorous intensity activity and muscle-strengthening and bone-strengthening activities should be done at least 3 days per week.

**Adults (ages 18-64)**
- For substantial health benefits, 150 minutes a week of moderate intensity, or 75 minutes a week of vigorous intensity aerobic physical activity, or an equivalent combination of moderate and vigorous intensity aerobic physical activity, performed in episodes of at least 10 minutes, preferably spread throughout the week.
- For additional and more extensive health benefits, 5 hours (300 minutes) a week of moderate intensity aerobic physical activity, or 2 hours and 30 minutes a week of vigorous intensity physical activity, or an equivalent combination of both.
- Muscle-strengthening activities involving all major muscle groups performed on 2 or more days per week.

**Older Adults (ages 65 and older)**
- Same as key guidelines for adults aged 18-64. If not possible due to limiting chronic conditions, be physically active as abilities allow. Avoid inactivity. Do exercises that maintain or improve balance if at risk of falling.

**NASPE Guidelines for Ages 0-5**
The National Association for Sport and Physical Education (NASPE) has developed specific guidelines⁶ for the physical activity of children from birth to age 5 that reflect the best professional guidance for motor development, movement, and exercise. NASPE recommends that “all children from birth to age 5 should engage daily in physical activity that promotes movement skillfulness and foundations of health-related fitness.”⁷

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⁵ The *2008 Physical Activity Guidelines for Americans* recommend doing both aerobic and muscle-strengthening activities. Examples of moderate intensity aerobic activities are walking briskly (3 miles per hour or faster, but not race walking), water aerobics, bicycling slower than 10 miles per hour, doubles tennis, ballroom dancing, and general gardening. A person should feel some exertion, but be able to comfortably carry on a conversation during the activity. Examples of vigorous intensity aerobic activities are race walking, jogging, running, swimming laps, singles tennis, aerobic dancing, bicycling 10 miles per hour or faster, jumping rope, heavy gardening (continuous digging or hoeing), and hiking uphill or with a heavy backpack. The level of activity should be intense enough to result in significant increase in heart and breathing rate.

⁶ The *2008 Physical Activity Guidelines for Americans* recommend doing both aerobic and muscle-strengthening activities. Examples of moderate intensity aerobic activities are walking briskly (3 miles per hour or faster, but not race walking), water aerobics, bicycling slower than 10 miles per hour, doubles tennis, ballroom dancing, and general gardening. A person should feel some exertion, but be able to comfortably carry on a conversation during the activity. Examples of vigorous intensity aerobic activities are race walking, jogging, running, swimming laps, singles tennis, aerobic dancing, bicycling 10 miles per hour or faster, jumping rope, heavy gardening (continuous digging or hoeing), and hiking uphill or with a heavy backpack. The level of activity should be intense enough to result in significant increase in heart and breathing rate.


END NOTES


5 Ibid.


8 California Department of Public Health, Network for a Healthy California. California Teen Eating, Exercise and Nutrition Survey (CalTEENS), unpublished data; 2008

9 Ibid.

10 Ibid.


12 Ibid.

13 California Department of Public Health. (February 2011).


18 Ibid.


21 Ibid.
FOR MORE INFORMATION

This module on physical activity is one component of Understanding Nutrition: A Primer on Programs and Policies in California. Go to www.ccrwf.org to access additional primer modules.

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